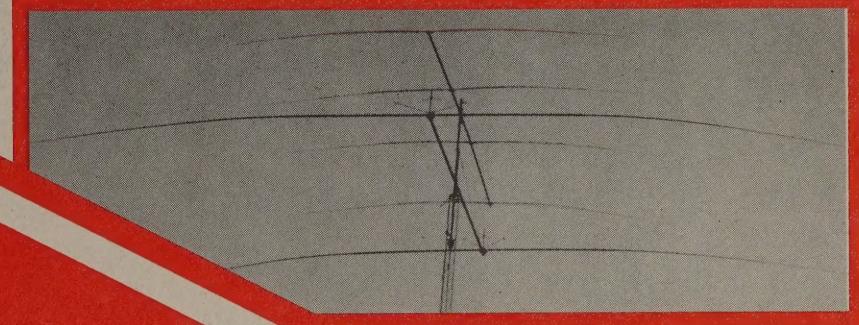
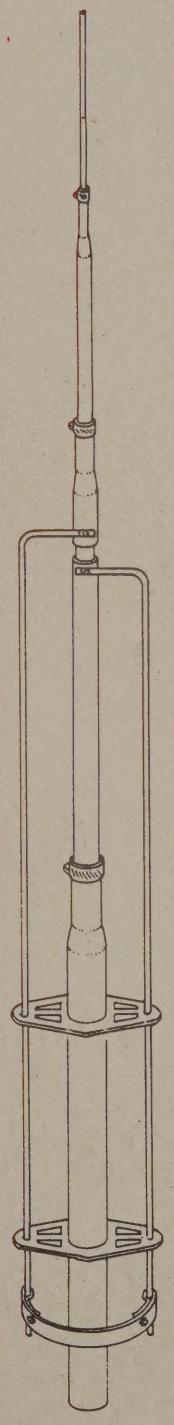
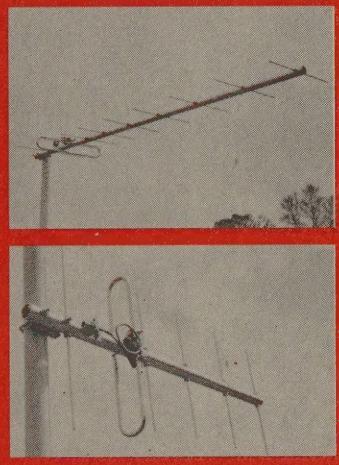


KLM

ANTENNAS, INC.

P.O. BOX 694 • MONROE, WA 98272

(360) 794-2923
FAX (360) 794-0294





KLM continues to build the finest communication antennas in the world. Our new manufacturing facility in Monroe, Washington will allow us to increase our production and expand our line of quality antennas. We have many new products in the research and development stage. We will announce these products as soon as they pass rigorous field testing.

SHIPPING INFORMATION...

All *KLM* antennas are shipped in heavy cardboard containers filled with expanding foam. All HF antennas marked with "*" on the price list must be shipped motor freight. Transit time in the Continental US is approximately one week. All VHF/UHF antennas are shipped UPS ground. Next Day and Second Day UPS is available at an extra charge. Freight quotes for large antennas are at no charge. Insurance is available upon request. Damage in shipping is the transit company's responsibility. Damage **must be noted at time of delivery** in order to make damage claims.

WARRANTY...

KLM offers a one year warranty on parts and labor. Dealer's name, date of purchase and serial number are required to process warranty claims. *KLM* reserves the right to make revisions in current production of equipment and assumes no obligation to incorporate these changes in earlier equipment models. Replacement parts are available directly from our manufacturing facility.

CONSERVATIVE RATINGS...

KLM's antenna specifications are based on "real world" performance and measurements. All gain figures use the recognized half-wave dipole reference.

CONSTRUCTION...

All *KLM* aluminum components are of strong weather-resistant 6062-T832 or 6061-T832 alloy. All hardware is stainless steel except for mounting U-bolts. Plastics are the latest in ultraviolet protection. New insulator material is of tough fiberglass reinforced Polycarbonate.

As *KLM* strives for uncompromised performance and quality, we continue to press forward in technological advances with our antennas. Our philosophy is to provide you, our customer, with products, service, and engineering support that is a cut above the rest.

Bruce Scott
President

KLM AMATEUR ANTENNAS

HOW KLM RATES BANDWIDTH, GAIN AND VSWR:

Bandwidth figures for almost all *KLM* antennas indicate the actual usable coverage without retuning, at the specified VSWR. With a tunable antenna like the JV2, the figures show the tuning range (144-147 MHz) followed by the operational coverage (x2 MHz) at the specified VSWR. GAIN figures, except the verticals, use the standard half-wave dipole reference (dBd) and indicate usable gain that is normal near constant across the rated bandwidth. "TYP" (typical) indicates an average figure used only with extremely broadband models such as the 10-30-7LPA. Gain figures for the 2 Meter, 1 1/4 Meter and 70 cm. lines have been carefully measured and correlated with the National Bureau of Standards Technical Note No. 688. The *KLM* gain figures may appear to be somewhat conservative when compared with other brands based on older, less exacting testing methods.

WORLD CLASS EXTRA HF ANTENNAS...

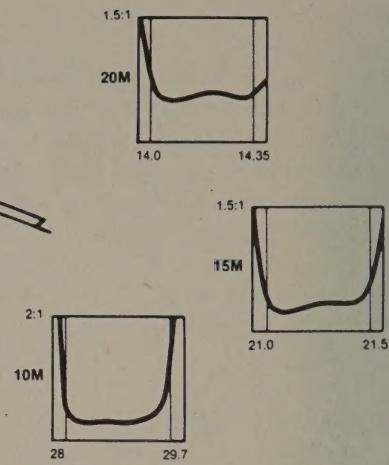
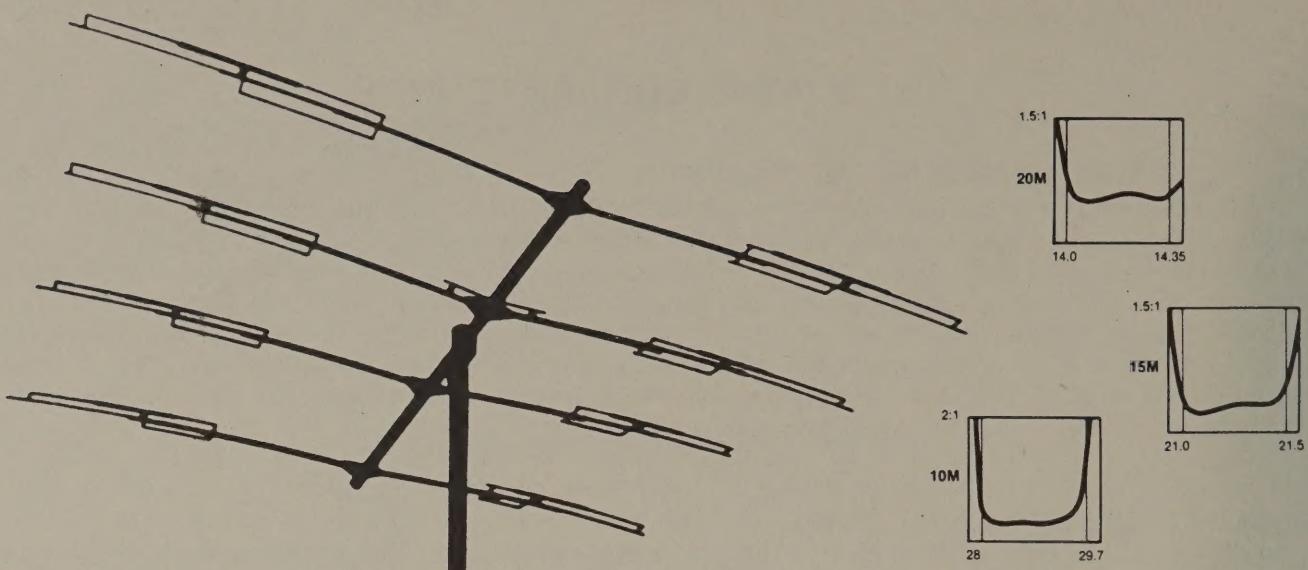
KLM's World Class Extra series of antennas are designed to satisfy the needs of the most serious DX operator. The 80M-3, 40M-4 and the 20M-15M-10M 6 element monobanders offer the ultimate in performance with no compromises. The electrical designs are devised to achieve maximum gain, bandwidth, and front-to-back ratios. Construction materials and techniques are selected for maximum strength and durability. All of *KLM*'s World Class Extra antennas use multiple driven elements. The average multi-element Yagi type beam antenna with only a single driven element is essentially a high Q system. Maximum gain, maximum F/B ratios, minimum VSWR and cleanest patterns are possible only over a very narrow frequency range; for example over the phone or CW portions of an amateur band. The Q of a single driven element becomes extremely high in the presence of multiple parasitic elements when these elements are adjusted for optimum performance. The Q can be reduced and the bandwidth increased by manipulating the dimensions of the parasitic elements, but at the expense of reduced gain and F/B ratios. This undesirable situation can be remedied by the use of two driven elements fed in parallel and tuned to different frequencies - one frequency near the bottom and one near the top of the amateur band. The parasitic elements can now be adjusted for maximum gain and F/B ratios rather than for broad VSWR curves. This is the familiar "log-cell" driven element system derived from log-periodic antenna design that is used in most of *KLM*'s HF antenna designs. The response of *KLM* dual-driven element antennas rolls off very rapidly outside the specified band coverage thus providing an added bonus in the form of lessened radiation on adjacent frequencies. *KLM* uses boom-insulated elements throughout. This provides total isolation of the antenna elements from the boom and minimizes possible interaction effects from the boom. Exclusive *KLM* designed insulators are molded of a special glass-filled material which has excellent insulating properties and extremely high mechanical strength. The form is webbed....heavily reinforced at stress points to withstand high winds safely. To minimize unsightly "droop" in long elements, the mounting angle is tilted slightly upward.

HF MONOBAND YAGIS...

KLM high performance monobanders are the answer for quality installations where larger models are not practical or necessary. Moderate in size, they can be easily stacked with other beams without overloading the tower/rotor capabilities. *KLM* monobanders offer many of the superb performance and construction features of the World Class Extra series. *KLM*'s dual-driven element system provides full performance and broadband coverage, in many cases across the entire amateur band! Matching problems are eliminated with the *KLM* 3-60-4:1 baluns which are rated to 5kW PEP. 6063-T832 aluminum alloy, massive insulators and stainless steel hardware (except U-bolts), along with swaged boom sections assure years of trouble-free, consistent performance. The 40M-3, 40M-4, 20M-5, 20M-6, and the 15M-6 are also available with a heavy duty boom (1/4" wall) at an additional cost. The 80M-2 and 80M-3 come with the heavy duty boom.

TRIBANDERS...

KLM is world famous for its high performance tribanders. Innovative engineering and construction have produced antennas that **consistently outperform** the competition. The four element KT-34A offers an unusually compact solution for a three band high performance installation. The six element KT-34XA has been designed to outperform all commercially available tribanders and many monobanders as well. The high performance of these tribanders results from their innovative construction. Traps, coils, and capacitors found on conventional tribanders are replaced by lossless linear loading and high Q air capacitors constructed of aluminum tubing. These techniques coupled with *KLM*'s unique dual driven element system allow broadband performance with high gain and low VSWR remaining nearly constant across the three bands. The KT-34A can be upgraded to the KT-34XA at any time. The boom length of the KT-34A is doubled, and one tri-resonant and one full size 10 meter element is added. These changes increase the gain to 11-11.3dBd on 10M, 9-9.5 dBd on 15M, and 8.5-9 dBd on 20M.



KLM's KT-34A...Broadbanded, efficient, compact!

The KT-34A is a very special antenna, representing the first significant step forward for tribander design in 20 or more years. It is made for the amateur and the equipment of today, and advanced enough to meet the challenges of the future.

What makes the KT-34A so different from a conventional tribander? Basically, the traps, coils, and capacitors have been discarded in favor of lossless linear-loading and Hi-Q air capacitors, all composed of aluminum tubing! These allow the KT-34A to handle 5kW PEP at an unusually high level of **efficiency**. The linear loading also makes full 1/4-wave elements possible on 10 and 15 meters, and brings 20 meters much closer to the desirable 1/4-wave than any conventional tribander (the sketch below shows the remarkable metamorphosis of the KT-34A design).

Two driven elements are employed to make the KT-34A unusually **broadbanded** (a concept applied to most *KLM* antennas). VSWR and performance remain nearly constant across each of the three bands (see the VSWR charts). A *KLM* balun is supplied to allow direct feed from your 50 ohm coax.

Structurally, the KT-34A is built tough. No boom support is required. All the aluminum, including the boom, is strong weather resistant 6063-T832 alloy. All the hardware is stainless steel except for the mounting U-bolts. Virtually indestructible Lexan insulators support the elements and insulate them from the boom. Rotation is possible by most any ham rotor. Wind balance and wind survival are excellent. Boom length is only 16 feet.

To meet your future needs, the KT-34A is easily expandable. The KT-34XA Upgrade Kit, which adds two new elements and doubles the boom length, produces substantial increases in performance. Your KT-34A cannot become obsolete!

A great deal of thought and care has gone into the design of this antenna. It's not just another "me too" tribander, but one developed from modern techniques, materials and engineering. We hope you will give it a try. We know you won't be disappointed....

KT-34A SPECIFICATIONS

Frequencies of operation:

14.0-14,350 MHz

21.0-21.450

28-29.750

Gain: 7 dBd \pm .3 dB across each band

F/S: 30 dB

F/B: 20 dB

Feed impedance: 50 ohms with balun supplied

Power rating: 5kW PEP

Boom: 16 ft. x 3 in. O.D.

Mast: for 2 in.O.D. (standard)

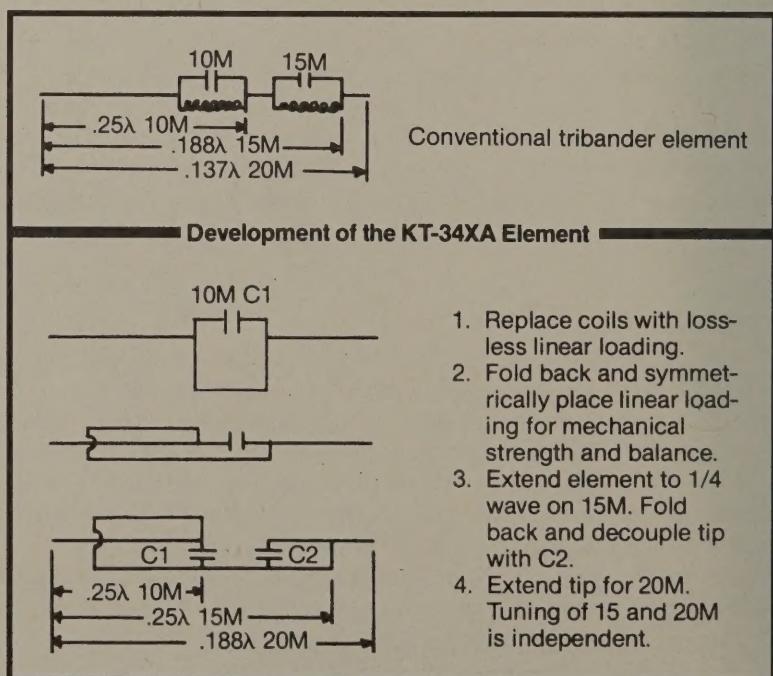
Element length: 24 ft. average

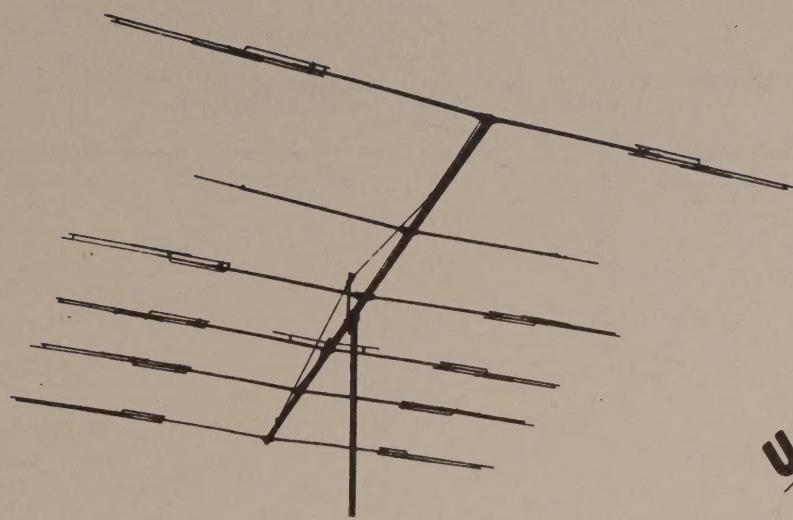
Turning radius: 16 ft.

Wind area: 6 sq. ft.

Wind survival: 100 M.P.H.

Weight: 45 lbs





U.P.S. SHIPPABLE

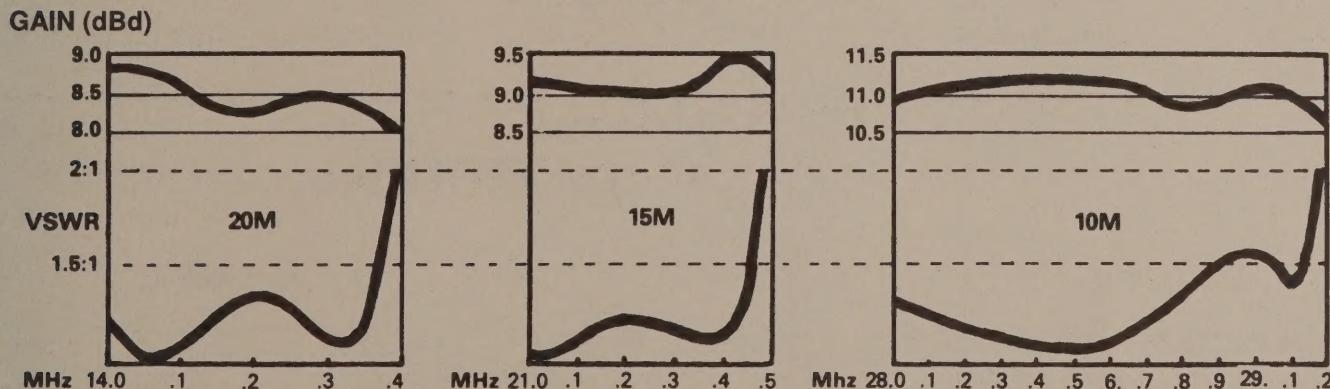
KLM's KT-34XA

Outperforms **ALL** commercially available tribanders and many monobanders, too!

KLM's KT-34XA TRIBANDER is the 2nd generation of unique antennas designed to provide superior broadband coverage on 20, 15, and 10 meters. The combination of lossless linear loading and hi-Q air capacitors enables the KT-34XA to outperform **all** commercially available tribanders and meet or exceed the performance of a conventional stacked monoband system. The lower weight and windload of a single antenna means reduced tower and rotator requirements. Thus, overall system costs can be kept to a minimum while enjoying the best of monobander-type performance.

KLM's field proven KT-34A is the heart of the "XA" model. The boom length of the "A", however, has been doubled, and one tri-resonant and one full size 10 meter element have been added. These changes increase the gain to **11-11.3 dBd** on 10M, **9-9.5 dBd** on 15M, and **8.5-9 dBd** on 20M. Two driven elements are used to make the KT-34XA unusually broadbanded (a concept applied to many KLM antennas). Gain is virtually flat across each band except for 10 meters which has been optimized for the DX'er, 28-29 MHz. The chart below shows the remarkable performance qualities of the KT-34XA.

KT-34XA GAIN vs. VSWR



Mechanically, the KT-34XA has been built to survive the toughest weather conditions. All aluminum, including the boom, is strong 6063-T832 alloy. All electrical hardware is stainless steel. Virtually indestructible "Lexan" insulators, just like those on KLM's 40 meter "Big Sticker," are used for mounting the elements and insulating them from the boom. KLM's 3-60 MHz 4:1 balun is supplied for direct connection to any 50 ohm feed line.

KT-34XA SPECIFICATIONS

Frequencies of operation: Gain:

14.0-14.350 MHz 8.5-9 dBd

21.0-21.50 9-9.5

28-29 11-11.3

F/S: 40 dB

F/B: 20 dB

Feed impedance: 50 ohms with balun supplied

Power rating: 5kW PEP Wt. 75 lbs

Active elements: 20M = 5

15M = 5

10M = 6

Boom: 32 ft. x 3 in. O.D. (guy support supplied)

Mast: for 2 in. O.D. (standard)

Element length: 24 ft. average

Turning radius: 21.5 ft.

Wind area: 9 sq. ft.

Wind survival: 100 M.P.H.

— VERTICAL / DIPOLE —

12-17-30V

ELECTRICAL

- Bandwidth 30, 17, & 12 Meters
- VSWR 1.5:1
- Feed Imp 50 Ohms
- Balun 3-60 1:1



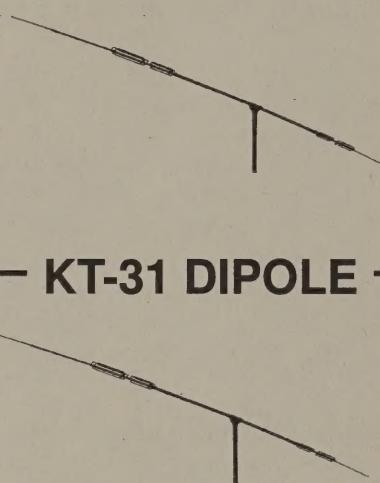
MECHANICAL

- Length/Height 21 ft. 3 in. - (6.43 M)
- Weight 6.5 lbs.
- Mast 2 in. (5.08 cm)
- Windload 1 sq. ft. (0.093 sq. M)

12-17-30D

ELECTRICAL

- Bandwidth 30, 17, & 12 Meters
- VSWR 1.5:1
- Feed Imp 50 Ohms
- Balun 3-60 1:1



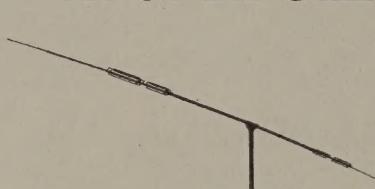
MECHANICAL

- Length/Height 39 ft. - 8.5 in. (12.10 M)
- Weight 13 lbs.
- Mast 2 in. (5.08 cm)
- Windload 2 sq. ft. (0.186 sq. M)

KT-31 DIPOLE

ELECTRICAL

- Bandwidth 20, 15, & 10 Meters
- VSWR....Less than 1.5:1
- Feed Imp 50 Ohms
- Balun 3-60 1:1



MECHANICAL

- Length 24 ft. 6 in.
- Weight 9 lbs.
- Mast 2 in. (5.08 cm)
- Windload 85 sq. ft. (.08 sz. M)

HF VERTICALS

40-10V VERTICAL

ELECTRICAL

- Frequency 7, 14, 21, 28 MHz
- Gain 0 dBd
- VSWR 1.5:1
- Feed Imp 50 Ohms



MECHANICAL

- Height 26.5 ft.
- Weight 23 lbs.
- Mast 2 in. O.D.
- Windload 1.8 sq. ft.

SSV 80-40-15

ELECTRICAL

- Bands 75/80,40 15M+
- VSWR 1.5:1
- Feed Imp 50 Ohms



MECHANICAL

- Height 60-65 ft.
- Windload 100 MPH + Wind Survival
- Weight 88 lbs.

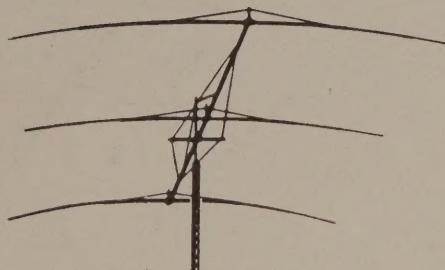
3 anchors set in cement

— 80 METERS —

80M-3 World Class Extra

ELECTRICAL

- Bandwidth.....3.5-4.0 MHz x90 kHz
- Gain.....7.0 dBd
- VSWR.....1.5:1
- F/B.....18 db
- Feed Imp.....50 Ohms
- Balun.....1:1, Coax



MECHANICAL

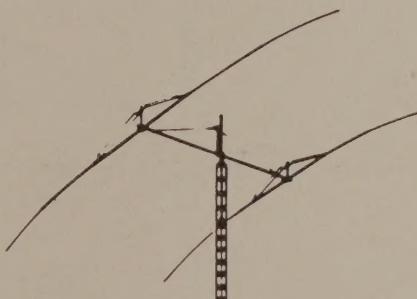
- Element Length.....90 ft.
- Boom Length.....60 ft.
- Boom Size.....4 in. x 1/4 in. Wall
- Turn Radius.....54 ft.
- Windload.....30 sq. ft.
- Weight.....295 lbs.
- Mast.....2 in./3 in.

**Phone/CW Switching Option
available at additional cost.
Order 80M-3R*

80M-2

ELECTRICAL

- Bandwidth.....3.5-4.0 MHz x80 kHz
- Gain.....4.0 dBd
- VSWR.....1.5:1
- F/B.....12 db
- Feed Imp.....50 Ohms
- Balun.....1:1, Coax



MECHANICAL

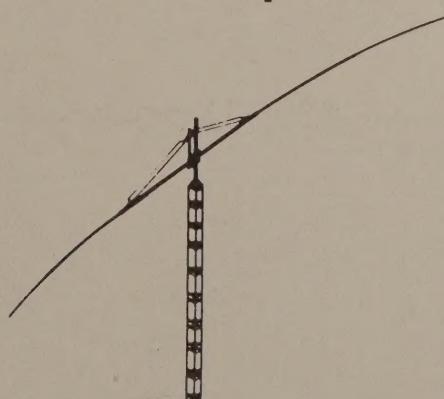
- Element Length.....90 ft.
- Boom Length.....36 ft.
- Boom Size.....4 in. x 1/4 in. Wall
- Turn Radius.....48 ft.
- Windload.....20 sq. ft.
- Weight.....255 lbs.
- Mast.....2 in./3 in.

**Phone/CW Switching Option
available at additional cost.
Order 80M-2R*

80M-1 Dipole

ELECTRICAL

- Bandwidth.....3.5-4.0 MHz x75 kHz
- Gain.....0 dBd
- VSWR.....1.5:1
- Feed Imp.....50 Ohms
- Balun.....1:1, 5 KW



MECHANICAL

- Element Length.....90 ft.
- Turn Radius.....45 ft.
- Windload.....10 sq. ft.
- Weight.....90 lbs.
- Mast.....2 in./3 in.

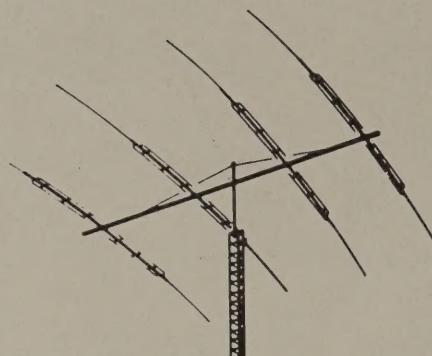
**Phone/CW Switching Option
available at additional cost.
Order 80M-1R*

— 40 METERS —

40M-4 World Class

ELECTRICAL

- Bandwidth.....7.0-7.3 MHz
x260 kHz
- Gain.....7.2 dBd
- VSWR.....1.5:1
- F/B.....20 db
- Feed Imp.....50 Ohms
- Balun.....4:1, 5 kW



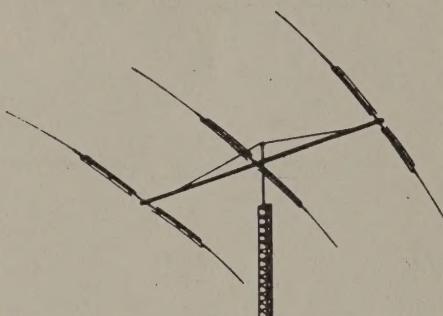
MECHANICAL

- Element Length.....46 ft.
- Boom Length.....42 ft.
- Turn Radius.....32 ft.
- Windload.....12 sq. ft.
- Weight.....85 lbs.
- Mast.....2 in.

40M-3A World Class

ELECTRICAL

- Bandwidth.....7.0-7.3 MHz
x200 kHz
- Gain.....6.5 dBd
- VSWR.....1.5:1
- F/B.....20 db
- Feed Imp.....50 Ohms
- Balun.....1:1, Coax



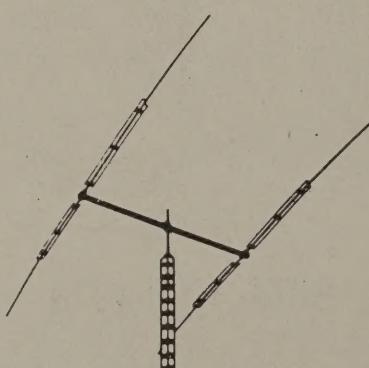
MECHANICAL

- Element Length.....46 ft.
- Boom Length.....32 ft.
- Turn Radius.....28 ft.
- Windload.....10 sq. ft.
- Weight.....70 lbs.
- Mast.....2 in.

40M-2A

ELECTRICAL

- Bandwidth.....7.0-7.3 MHz
x125 kHz
- Gain.....4.9 dBd
- VSWR.....1.5:1
- F/B.....12 db
- Feed Imp.....50 Ohms
- Balun.....1:1, Coax



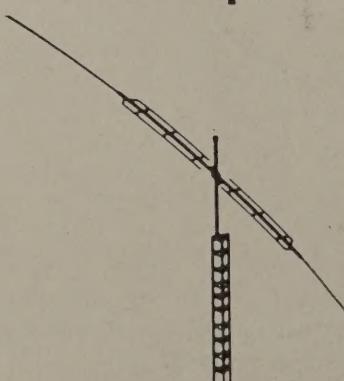
MECHANICAL

- Element Length.....46 ft.
- Boom Length.....16 ft.
- Turn Radius.....25 ft.
- Windload.....6 sq. ft.
- Weight.....45 lbs.
- Mast.....2 in.

40M-Dipole

ELECTRICAL

- Bandwidth.....7.0-7.3 MHz
x75 kHz
- Gain.....0 dBd
- VSWR.....1.5:1
- Feed Imp.....50 Ohms
- Balun.....1:1, 5 kW



MECHANICAL

- Element Length.....46 ft., 6 in.
- Turn Radius.....23 ft.
- Windload.....2 sq. ft.
- Weight.....15 lbs.
- Mast.....2 in.

— 20 METERS —

20M-6 World Class Extra —

ELECTRICAL

- Bandwidth.....13.9-14.4 MHz
- Gain.....11 dBd
- VSWR.....1.5:1
- F/B.....30 db
- Feed Imp.....50 Ohms
- Balun.....4:1, 5 kW



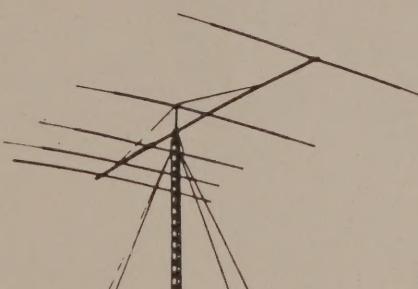
MECHANICAL

- Element Length.....37 ft.
- Boom Length.....57 ft.
- Turn Radius.....34 ft.
- Windload.....12.8 sq. ft.
- Weight.....95 lbs.
- Mast.....2 in.

20M-5 —

ELECTRICAL

- Bandwidth.....13.9-14.4 MHz
- Gain.....9.7 dBd
- VSWR.....1.5:1
- F/B.....30 db max.
- Feed Imp.....50 Ohms
- Balun.....4:1, 5 kW



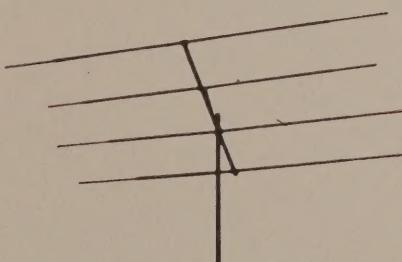
MECHANICAL

- Element Length.....37 ft.
- Boom Length.....42 ft.
- Turn Radius.....28 ft.
- Windload.....9.3 sq. ft.
- Weight.....65 lbs.
- Mast.....2 in.

20M-4 —

ELECTRICAL

- Bandwidth.....13.9-14.4 MHz
- Gain.....7.7 dBd
- VSWR.....1.5:1
- F/B.....25 db
- Feed Imp.....50 Ohms
- Balun.....4:1, 5 kW



MECHANICAL

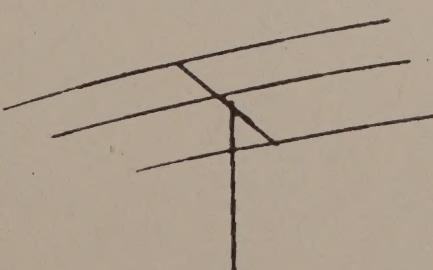
- Element Length.....37 ft.
- Boom Length.....21 ft.
- Turn Radius.....21 ft.
- Windload.....6.5 sq. ft.
- Weight.....50 lbs.
- Mast.....2 in.

— 17 METERS —

17M-3 —

ELECTRICAL

- Bandwidth...18.065-18.170 MHz
- Gain.....6.5 dBd
- VSWR.....Less than.....1.5:1
- F/B...Greater than.....20 db
- Feed Imp.....50 Ohms
- Balun.....4:1, 5 kW



MECHANICAL

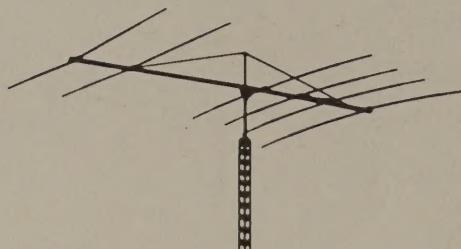
- Element Length.....28 ft.
- Boom Length.....3 in. O.D. X 16 ft. 9 in.
- Turn Radius.....17 ft.
- Windload.....4.5 sq. ft.
- Weight.....25 lbs.
- Mast.....2 in.

15 METERS

15M-6 World Class Extra

ELECTRICAL

- Bandwidth.....21.0-21.5 MHz
- Gain.....11.0 dBd
- VSWR.....1.5:1
- F/B.....30 db
- Feed Imp.....50 Ohms
- Balun.....4:1, 5 kW



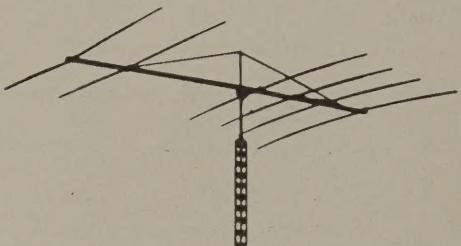
MECHANICAL

- Element Length.....25 ft.
- Boom Length.....36 ft.
- Turn Radius.....23 ft.
- Windload.....8.5 sq. ft.
- Weight.....60 lbs.
- Mast.....2 in.

15M-6LD

ELECTRICAL

- Bandwidth.....21.0-21.450 MHz
- Gain.....10.5 dBd
- VSWR.....1.5:1
- F/B.....30 db
- Feed Imp.....50 Ohms
- Balun.....4:1, 5 kW



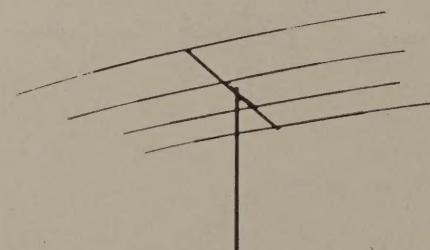
MECHANICAL

- Element Length.....25 ft.
- Boom Length.....36 ft.
- Turn Radius.....23 ft.
- Windload.....5 sq. ft.
- Weight.....34 lbs.
- Mast.....2 in.

15M-4

ELECTRICAL

- Bandwidth.....21.0-21.5 MHz
- Gain.....7.7 dBd
- VSWR.....1.5:1
- F/B.....25 db
- Feed Imp.....50 Ohms
- Balun.....4:1, 5 kW



MECHANICAL

- Element Length.....25 ft.
- Boom Length.....14 ft.
- Turn Radius.....14 ft.
- Windload.....3 sq. ft.
- Weight.....18 lbs.
- Mast.....2 in.

10 METERS

10M-6 World Class Extra

ELECTRICAL

- Bandwidth.....28-30 MHz
x1 MHz
- Gain.....11 dBD
- VSWR.....1.5:1
- F/B.....30 db
- Feed Imp.....50 Ohms
- Balun.....4:1, 5 kW



MECHANICAL

- Element Length.....18 ft.
- Boom Length.....27.5 ft.
- Turn Radius.....16.5 ft., 8 in.
- Windload.....4 sq. ft.
- Weight.....29 lbs.
- Mast.....2 in.

10M-4

ELECTRICAL

- Bandwidth.....28-30 MHz
x1 MHz
- Gain.....7.7 dBD
- VSWR.....1.5:1
- F/B.....25 db
- Feed Imp.....50 Ohms
- Balun.....4:1, 5 kW



MECHANICAL

- Element Length.....18 ft.
- Boom Length.....10 ft.
- Turn Radius.....10.5 ft.
- Windload.....2.25 sq. ft.
- Weight.....12 lbs.
- Mast.....2 in.

HF VERTICALS

160V Vertical

ELECTRICAL

- Bandwidth.....1.8-2.0 MHz
x20 kHz
- Gain.....0 dBD
- VSWR.....1.5:1
- Feed Imp.....50 Ohms



MECHANICAL

- Height.....24 ft.
- Windload.....1.4 sq. ft.
- Weight.....10 lbs.
- Mast.....2 in.

40-10V Vertical

ELECTRICAL

- Frequency.....7, 14, 21, 28 MHz
- Gain.....0 dBD
- VSWR.....1.5:1
- Feed Imp.....50 Ohms



MECHANICAL

- Height.....26.5 ft.
- Windload.....1.8 sq. ft.
- Weight.....23 lbs.
- Mast.....2 in. O.D.

VHF

For 6 meters, KLM offers 6M-5, 6M-7LD, and 6M-7LB. For 2 meters, new offerings include the 2M-20LBX, the high-performance 2M-16LBX, and the 2M-22C circular. The 2M-16LBX is tailored for EME with a conservative gain rating of 14.5 dBd at 144 MHz, while the 2M-22C provides optimum performance for the Oscar enthusiast. Continuing in the 2 meter line are the tried-and-true 2M-4X, 2M-8, and the 2M-13LBA. For 220 MHz, three designs are available. The new general-purpose 220-14X and the high-performance long-boom 220-22LBX, as well as the 220-7 are offered.

6 METERS

6M-5

ELECTRICAL

- Bandwidth.....50-52 MHz
- Gain.....9.7 dBd
- VSWR.....1.5:1
- F/B.....30 db
- Feed Imp.....50 Ohms, unbal.
- Balun.....4:1, 5 kW



MECHANICAL

- Element Length.....57 3/4 in.
- Boom Length.....11.75 ft.
- Turn Radius.....7.5 ft.
- Windload.....1.7 sq. ft.
- Weight.....9 lbs.
- Mast.....2 in.

6M-7LD (Light Duty)

ELECTRICAL

- Bandwidth.....50-51 MHz
- Gain.....10.5 dBd
- VSWR.....1.5:1
- F/B.....30 db
- Feed Imp.....50 Ohms, unbal.
- Balun.....4:1, 5 kW



MECHANICAL

- Element Length.....61 in.
- Element Diameter.....3/8 in.
- Boom Length.....20 ft.
- Boom Diameter.....1.5 in.
- Turn Radius.....13 ft.
- Windload.....2.5 sq. ft.
- Weight.....12 lbs.
- Mast.....2 in.

6M-7LB (Long Boom)

ELECTRICAL

- Bandwidth.....50-52 MHz
- Gain.....11.5 dBb
- VSWR.....1.5:1 (50-51 MHz)
- F/B.....30 db
- Feed Imp.....50 Ohms, unbal.
- Balun.....4:1, 5 kW



MECHANICAL

- Element Length.....61 in.
- Element Diameter.....1/2 in.
- Boom Length.....25.75 ft.
- Boom Diameter.....2 in.
- Turn Radius.....16 ft.
- Windload.....3 sq. ft.
- Weight.....22 lbs.
- Mast.....2 in.

2 METER

2M-20LBX

ELECTRICAL

- Bandwidth Spec. 144-146
Usable 143-148
144-15.5 dBd
- Gain 145-15.5 dBd 146-15.4 dBd
147-15.3 dBd 148-13.7 dBd
- VSWR Less than.....1.5:1
- F/B Greater than....30 dB
- Feed Imp 50 Ohms
- Balun 4:1, 2 kW Coax
- Beamwidth E = 26°, H = 28°

MECHANICAL

- Element Length 40 5/8 in.
- Boom Length 38.5 ft.
- Turn Radius 21 ft., 10 in.
- Windload 2.19 sq. ft.
- Weight 17 lbs
- Mast 2 in.



2M-16LBXM

ELECTRICAL

- Bandwidth Spec. 144-148
- Gain 144-14.5dBd
145-14.5 /146-14.4dBd
147-14.3 /148-13.2dBd
- VSWR 1.5:1
- F/B 20 dB min.
- Feed Imp 50 Ohms, unbal.
- Balun 4:1, 2 kW Coax
- Beamwidth E = 26°, H = 29°

MECHANICAL

- Element Length 40 5/8 in. max.
- Boom Length 28 ft.
(4.1 wavelengths)
- Turn Radius 15 ft., 5 in.
- Windload 2.44 sq. ft.
- Weight 10 lbs.
- Mast 2 1/8 in. max.



2M-13LBA

ELECTRICAL

- Bandwidth 144-148 MHz
- Gain 13.3 dBd
- VSWR 1.5:1
- F/B 20 dB min.
- Feed Imp 50 Ohms, unbal.
- Balun 4:1, 2 kW Coax
- Beamwidth E = 28°, H = 33°

MECHANICAL

- Element Length 40 5/8 in. max.
- Boom Length 21.5 ft.
- Turn Radius 13 ft.
- Windload 1.6 sq. ft.
- Weight 9 lbs
- Mast 2 in.



2M-11X

ELECTRICAL

- Bandwidth Spec. 144-146
Usable 143-148
- Gain 12.5 dBd
- VSWR 1.5:1
- F/B 20 dB min.
- Feed Imp 50 Ohms
- Balun 4:1, 2 kW Coax
- Beamwidth E = 30°, H = 34°
- Mount Horiz. or Vert.

MECHANICAL

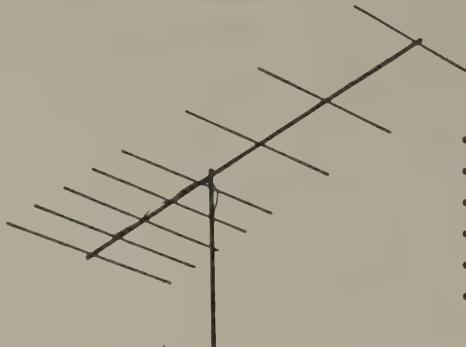
- Element Length 40 5/8 in. max.
- Boom Length 15 ft., 4 in.
- Turn Radius 9 ft.
- Windload 1.38 sq. ft.
- Weight 5.5 lbs.
- Mast 2 1/8 in. max.



2M-8

ELECTRICAL

- Bandwidth 144-148 MHz
- Gain 10.3 dBd
- VSWR 1.5:1
- F/B 30 dB
- Feed Imp 50 Ohms, unbal.
- Balun 1:1 Sleeve, 2 kW
- Beamwidth 50°



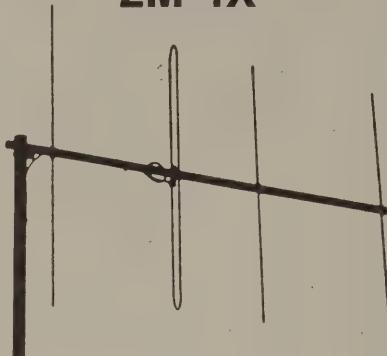
MECHANICAL

- Element Length 40 in. max.
- Boom Length 7.25 ft.
- Turn Radius 4 ft.
- Windload 0.65 sq.ft.
- Weight 4 lbs.
- Mast 2 in.

2M-4X

ELECTRICAL

- Bandwidth 144-148 MHz
- Gain 8.5 dBd
- VSWR 1.5:1
- F/B 29 dB
- Feed Imp 50 Ohms, unbal.
- Balun 4:1, 2 kW Coax
- Beamwidth 62°



MECHANICAL

- Element Length 40 5/8 in.
- Boom Length 4.2 ft.
- Turn Radius 4 ft.
- Windload 0.25 sq. ft.
- Weight 2 lbs
- Mast 2 in.
- Mounting Rear

2 METER CIRCULAR

2M-22C

ELECTRICAL

- Bandwidth 144-146 MHz
Usable 144-148 MHz
- Gain 13 dBc
- VSWR better than 1.5:1
- F/B 20 dB min.
- Feed Imp 50 Ohms, unbal.
- Balun 4:1 Coax, 2 kW PEP*
- Beamwidth 32°
- Ellipticity 3 dB max.



MECHANICAL

- Element Length 41 in. max.
- Boom Length 19 ft. 1 in.
- Turn Radius 13 ft.
- Windload 1.85 sq. ft.
- Weight 11 lbs.
- Mast 1 1/2-2 in.

*Derate to 250W when using
CS-3 Switcher (supplied)

2M-14C

ELECTRICAL

- Bandwidth 144-150 MHz
- Gain 11 dBdc
- VSWR 1.5:1
- F/B 20 dB
- Feed Imp 50 Ohms, unbal.
- Balun 4:1, 2 kW Coax*
- Beamwidth 38°
- Ellipticity 3 dB max.



MECHANICAL

- Element Length 40 5/8 in. max.
- Boom Length 12 ft., 9 in.
- Turn Radius 7 ft.
- Windload 1.25 sq. ft.
- Weight 7.5 lbs.
- Mast 2 in.

*Derate to 250W when using
CS-3 Switcher (supplied)

220 MHz

220-22LBX

ELECTRICAL

- Bandwidth 220-225 MHz
- Gain 15.6 dBd
- VSWR 1.5:1
- F/B Ratio 20 dB
- F/S Ratio 30 dB
- Feed Imp 50 Ohms, unbal.
- Balun 4:1 Coax, 2 kW PEP
- Beamwidth E = 22°, H = 25°



MECHANICAL

- Boom Length 29.9 ft.
(6.65 wavelengths)
- Turn Radius 16 ft., 4 in.
- Windload 2.0 sq. ft.
- Weight 10 lbs.
- Mast 2 1/8 in. max diam.

220-14X

ELECTRICAL

- Bandwidth 220-225 MHz
- Gain 13.5 dBd
- VSWR 1.5:1
- F/B Ratio 20 dB min.
- F/S 30 dB min.
- Feed Imp 50 Ohms, unbal.
- Balun 4:1 Coax, 2 kW PEP
- Beamwidth E = 28°, H = 32°



MECHANICAL

- Boom Length 14 ft., 7 in.
(3.27 wavelengths)
- Turn Radius 8 ft.
- Windload 1.33 sq. ft.
- Weight 6.5 lbs.
- Mast 2 1/8 in. max. diam.

220-7

ELECTRICAL

- Bandwidth 219-226 MHz
- Gain 8.8 dBd
- VSWR 1.5:1
- F/B Ratio 20 dB min
- F/S Ratio 30 dB min.
- Feed Imp 50 Ohms, unbal.
- Balun 1:1 Sleeve, 2 kW
- Beamwidth E = 54°, H = 60°



MECHANICAL

- Boom Length 4.75 ft.
- Turn Radius 4 ft.
- Windload 0.73 max.
- Weight 3 lbs.
- Mast 1 1/2 in. O.D.
- Mounting Rear/Center
- Weight 9 lbs.

432 MHz

432-30LBX

ELECTRICAL

- Bandwidth 430-440 MHz
- Gain 17.3 dBd
- VSWR 1.5:1
- F/B 20 dB min.
- Feed Imp 50 Ohms, unbal.
- Balun 1:1, 2 kW
- Beamwidth E= Plane 19°
H= Plane 20°



MECHANICAL

- Element Length 14 in. max.
(9.6 wavelength)
- Boom Length 21 ft., 11 in.
- Turn Radius 12 ft., 4 in.
- Windload 1.71 sq. ft.
- Weight 9 lbs.
- Mast 2 1/8 in. max.

432-20LBX

ELECTRICAL

- Bandwidth 435-440 MHz
- Gain 15.3 dBd
- VSWR 1.5:1
- F/B 20 dB min.
- Beamwidth E = 26°, H = 28°
- Feed Imp 50 Ohms, unbal.
- Balun 1:1, 2 kW
- Mount Center



MECHANICAL

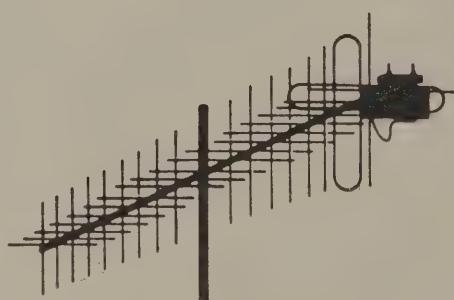
- Element Length 14 in. max.
(5.42 wavelength)
- Boom Length 12 ft., 4 in.
- Turn Radius 84 in.
- Windload 0.9 sq. ft.
- Weight 5 lbs.
- Mast 1 1/2 in.

435 MHz

435-40CX

ELECTRICAL

- Bandwidth Spec. 420-440 MHz
Usable 410-450 MHz
- Gain 15.2 dBdC @ 436 MHz
- VSWR 1.5:1
- F/B 20 dB min
- Beamwidth 25°
- Feed Imp 50 Ohms, unbal.
- Balun 4:1, Coax 2 kW*
- Mount Center



MECHANICAL

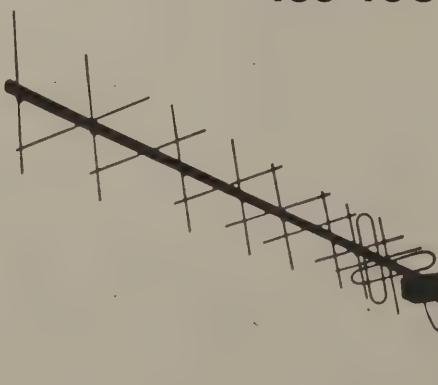
- Element Length 13.625 in. max.
- Boom Length 175.5 in.
- Turn Radius 105 in.
- Windload 1.16 sq. ft.
- Weight 10 lbs.
- Mast 1 1/2 in. max.
- Polarity Circular R.H. and L.H.
switchable using CS-2

*250W maximum when using CS-2
Switcher (supplied)

435-18C

ELECTRICAL

- Bandwidth 420-450 MHz
- Gain 12 dBdC
- VSWR 1.5:1
- F/B 20 dB
- Feed Imp 50 Ohms, unbal.
- Beamwidth 34°
- Ellipticity 3 dB max.
- Balun 2-4:1, 2 kW*
- Mount Center/Rear



MECHANICAL

- Element Length 13.25 in. max.
- Boom Length 7 ft., 4 in.
- Turn Radius 7 ft. max.
- Windload 0.5 sq. ft.
- Weight 4.5 lbs.
- Mast 1 1/2 in.
- Mount Rear
- Polarity Circular R.H. and L.H.
switchable using CS-2

*Derate to 250W when using CS-2
Switcher (supplied)

440 MHz

440-16X

ELECTRICAL

- Bandwidth 420-450 MHz
- Gain 14.0 dBd
- VSWR Less than....1.5:1
- F/B Greater than....20 dB
- Feed Imp 50 Ohms
- Balun Coax "N" 4:1, 2 kW
- Beamwidth $E = 28^\circ$, $H = 32^\circ$



MECHANICAL

- Element Length 14 in. max.
- Boom Length 10 ft. 6 in.
- Turn Radius 6 ft.
- Windload 0.74 sq. ft.
- Weight 7.5 lbs.
- Mast 1 1/2 in.
- Mount Center

440-10X

ELECTRICAL

- Bandwidth 420-470 MHz
- Gain 11.5 dBd
- VSWR Less than....1.5:1
- F/B Greater than....20 dB
- Feed Imp 50 Ohms
- Balun Coax "N" 4:1, 2 kW
- Beamwidth 48°



MECHANICAL

- Element Length 14 in. max.
- Boom Length 4.75 ft.
- Turn Radius 4.90 ft.
- Windload 0.53 sq. ft.
- Weight 4 lbs.
- Mast 1 1/2 in.
- Mount Rear

440-6X

ELECTRICAL

- Bandwidth 420-470 MHz
- Gain 8.9 dBd
- VSWR Less than....1.5:1
- F/B Greater than....20 dB
- Feed Imp 50 Ohms
- Balun Coax "N" 4:1, 2 kW
- Beamwidth 60°



MECHANICAL

- Element Length 14 in. max.
- Boom Length 28 in.
- Turn Radius 2 ft., 5 in.
- Windload 0.2 sq. ft.
- Weight 1.2 lbs.
- Mast 1 1/2 in.
- Mount Rear

1296 MHz

1.2-44LBX

ELECTRICAL

- Bandwidth 1260-1300 MHz
- Gain 18.2 dBd
- VSWR Better than...1.5 to 1
- Feed Imp 50 Ohms
- Balun 4:1 Rigid Coax

MECHANICAL

- Element Length 4.5 in.
- Boom Length 12 ft. 4 in.
- Turn Radius 84 in.
- Windload 1 sq. ft.
- Weight 10 lbs.
- Mast 2 in. O.D.
- Mount Center

1.2-24LBX

ELECTRICAL

- Bandwidth 1260-1300 MHz
- Gain 16.2 dBd
- VSWR Less than...1.5 to 1
- Feed Imp 50 Ohms
- Balun 4:1 Rigid Coax

MECHANICAL

- Element Length 4.5 in.
- Boom Length 75 3/4 in.
- Turn Radius 38 in.
- Windload 1/2 sq. ft.
- Weight 7 lbs.
- Mast Up to 2 in. O.D.
- Mount Center

1.2-15LBX

ELECTRICAL

- Bandwidth 1260-1300 MHz
- Gain 13.2 dBd
- VSWR Less than...1.5 to 1
- Feed Imp 50 Ohms
- Balun 4:1 Rigid Coax

MECHANICAL

- Element Length 4.5 in.
- Boom Length 42 in.
- Turn Radius 43 in.
- Windload 1/4 sq. ft.
- Weight 4 lbs.
- Mast Up to 2 in. O.D.
- Mount Rear

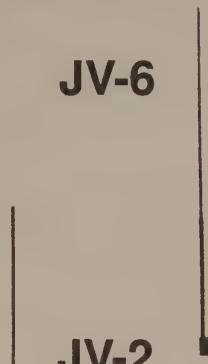
VHF-UHF VERTICALS

KLM offers a selection of omnidirectional stand-alone vertical antennas. These antennas will provide outstanding performance without the need of a ground plane. The JV-6 and the JV-2 will give 5 dBd more gain than a ground plane, while the JV-2X, JV-220X, and the JV-440X gives a 7 dBd improvement.

ELECTRICAL

- Bandwidth 50-54 MHz
(x800 kHz)
- Gain 5 dB/gnd plane
- VSWR 1.5:1
- Feed Imp 50 Ohms, unbal.

JV-6



MECHANICAL

- Element Length 15 ft. max.
- Weight 5 lbs.
- Mast 2 in. O.D. max.

ELECTRICAL

- Bandwidth 144-148 MHz
(x2 MHz)
- Gain 5 dB/gnd plane
- VSWR 1.5:1
- Feed Imp 50 Ohms, unbal.

JV-2



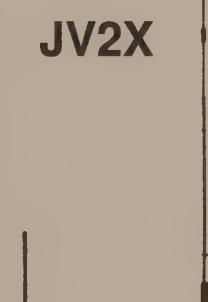
MECHANICAL

- Element Length 60 in.
- Weight 1.5 lbs.
- Mast 2 in. O.D. max.

ELECTRICAL

- Bandwidth 144-148 MHz
(x3 MHz)
- Gain 7 dB/gnd plane
- VSWR 1.5:1
- Feed Imp 50 Ohms, unbal.

JV2X



MECHANICAL

- Element Length 11 ft.
- Weight 2.1 lbs
- Mast 2 in. O.D. max.

ELECTRICAL

- Bandwidth 219-226 MHz
(x4 MHz)
- Gain 7 dB/gnd plane
- VSWR 1.5:1
- Feed Imp 50 Ohms, unbal.

JV220X



MECHANICAL

- Element Length 88 in.
- Weight 2 lbs.
- Mast 2 in. O.D. max.

ELECTRICAL

- Bandwidth 420-470 MHz
- Gain 7 dB/gnd plane
- VSWR 1.5:1
- Feed Imp 50 Ohms, unbal.

JV440X



MECHANICAL

- Element Length 34 in.
- Weight 1.1 lbs.
- Mast 2 in. O.D. max.

ELECTRICAL

- Bandwidth 27-30 MHz
(x250 kHz)
- Gain 3 dB gnd/plane
- VSWR 1.5:1
- Feed Imp 50 Ohms

JV10



MECHANICAL

- Element Length 27 ft.
- Windload 1.8 sq.ft.
- Weight 10 lbs.
- Mast 2 in.

COMMERCIAL COMMUNICATIONS

Antennas

Conservative Ratings!

Antenna specifications based on "real world" performance and measurements. All gain figures use the recognized half-wave dipole reference.

Coverage!

KLM's use of two or more driven elements produces outstanding bandwidth coupled with nearly constant gain and low VSWR. Use one *KLM* antenna where coverage requirements would normally call for two or more!

Construction!

All aluminum components of strong, weather-resistant 6063-T832 alloy. All stainless steel hardware except for U-bolts, Lexan, Teflon and other quality insulative materials.

134-138-14CP

ELECTRICAL

- Model C134-138-14CP
- Coverage 134-138 MHz
- Gain 11 dBDc
- VSWR 1.5:1 and less
- Beamwidth 3 dB pts: 48°
- Mounting Center



MECHANICAL

- Elements 7H/7V
- Feed Imp 50 Ohms, unbal.
- Balun (2) 4:1, 2 kW
- Boom Length 13 ft., 9 in.
- Boom Diameter 1 1/2 in.
- Weight 8 lbs.
- Mast 2 in.

152-174 MHz ANTENNAS

This versatile series of VHF antennas utilizes *KLM*'s multi-driven element system for broadband coverage while maintaining consistent gain and low VSWR. All beam antennas are suitable for horizontal or vertical polarization. All are supplied with *KLM*'s own copper/Teflon Airline balun for a perfect match and clean patterns.

162-174-11

ELECTRICAL

- Model 162-174-11
- Coverage 162-174 MHz
- Gain 12.5 dBD
- VSWR 1.5:1 and less
- Beamwidth 42°
- Mounting Center

MECHANICAL

- Elements 11
- Feed Imp 50 Ohms, unbal.
- Balun 1:1 sleeve, 2 kW
- Boom Length 11 ft.
- Boom Diameter 1 1/2 in.
- Weight 5 1/4 lbs.
- Mast 2 in.

162-174-7

ELECTRICAL

•Model	162-174-7
•Coverage	162-174 MHz
•Gain	9 dBd
•VSWR	1.5:1 and less
•Beamwidth	54°
•Mounting	Center/Rear

MECHANICAL

•Elements	7
•Feed Imp	50 Ohms, unbal.
•Balun	1:1 sleeve, 2 kW
•Boom Length	5 ft. 3 in.
•Boom Diameter	1 in.
•Weight	3 1/2 lbs.
•Mast	1 1/2 in.

152-162-11

ELECTRICAL

•Model	152-162-11
•Coverage	152-162 MHz
•Gain	12.5 dBd
•VSWR	1.5:1 and less
•Beamwidth	42°
•Mounting	Center

MECHANICAL

•Elements	11
•Feed Imp	50 Ohms, unbal.
•Balun	1:1 sleeve, 2 kW
•Boom Length	12 ft.
•Boom Diameter	1 1/2 in.
•Weight	5 1/2 lbs.
•Mast	2 in.

152-162-9

ELECTRICAL

•Model	152-162-9
•Coverage	152-162 MHz
•Gain	11.5 dBd
•VSWR	1.5:1 and less
•Beamwidth	48°
•Mounting	Center

MECHANICAL

•Elements	9
•Feed Imp	50 Ohms, unbal.
•Balun	1:1 sleeve, 2 kW
•Boom Length	8 ft.
•Boom Diameter	1 1/2 in.
•Weight	4.5 lbs.
•Mast	2 in.

HF LOG PERIODIC

KLM's Log Periodic antennas offer extended coverage of the amateur bands and intermediate frequencies. The 10-30-7LPA, for example, covers 20, 15, and 10 meters plus the WARC bands and many MARS frequencies. The addition of the 40M-1 dipole module provides 40 meter operation as well. This system is also available complete as the 7.2/10-30 LPA. For continuous coverage from 6 to 30 MHz we offer our 6-30-15 LP. This twin antenna system offers significant advantages over a full-sized single-boom model. Wind loading, weight, tower size and rotational requirements are substantially reduced without any sacrifice in performance. The 6-30-15LPA can be mounted on a common tower and fed with a single 50 ohm line or mounted on adjacent towers and fed by separate lines.

6-12-8LPA

ELECTRICAL

•Model	6-12-8LPA
•Coverage	6-12 MHz
•Gain	5.5-8 dbd
•VSWR	2:1 or less
•F/B	15 dB typ.
•Feed Input	50 Ohms, unbal.
•Balun	4:1, 5 kW

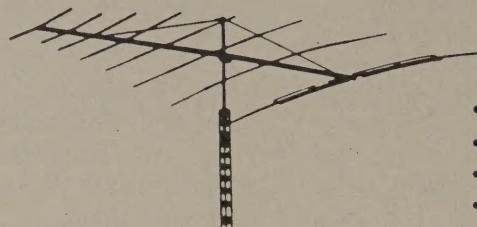
MECHANICAL

•Element Length	48 ft.
•Boom Length	46 ft.
•Turning Radius	33 ft.
•Windload	15.75 sq. ft.
•Weight	150 lbs.
•Mast	2 in.

7.2/10-30LPA

ELECTRICAL

- Bandwidth 7.2/10-30 MHz
- Gain 3/7 dBd typ.
- VSWR 1.5:1 typ.
- F/B 10/15 dB
- Feed Imp 50 Ohms, unbal.
- Balun 4:1, 5 kW



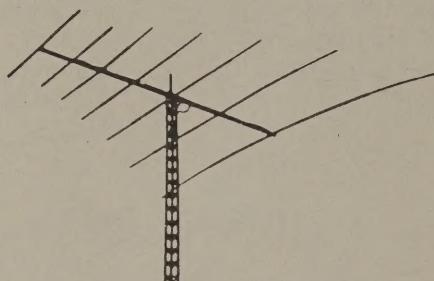
MECHANICAL

- Element Length 46 ft.
- Boom Length 42 ft.
- Turn Radius 32 ft.
- Windload 12 sq. ft.
- Weight 100 lbs.
- Mast 2 in.

10-30-7LPA

ELECTRICAL

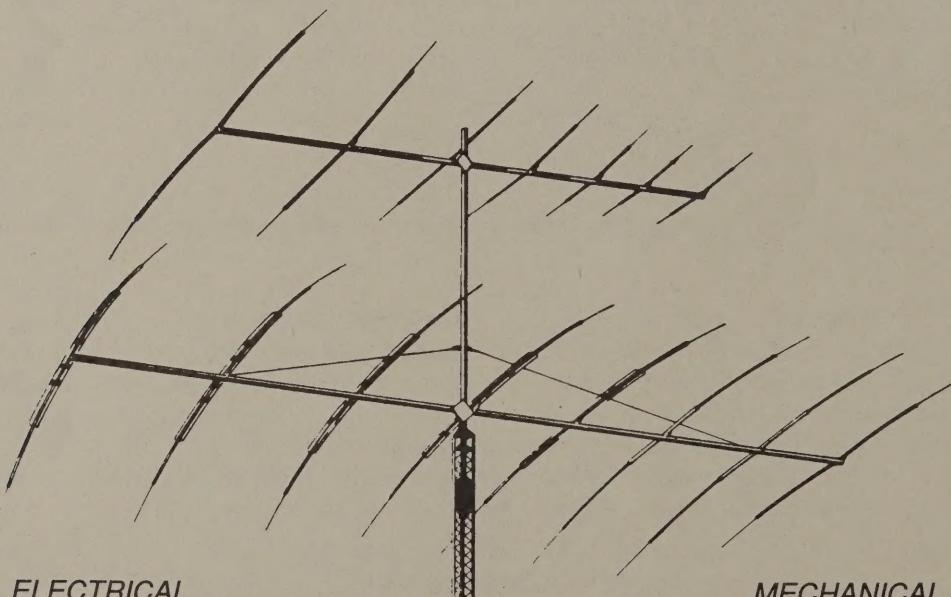
- Bandwidth 10-30 MHz
- Gain 7 dBd typ.
- VSWR 1.5:1 typ.
- F/B 15 dB
- Feed Imp 50 Ohms, unbal.
- Balun 4:1, 5 kW



MECHANICAL

- Element Length 43 ft.
- Boom Length 30 ft.
- Turn Radius 26 ft.
- Windload 8.25 sq. ft.
- Weight 70 lbs.
- Mast 2 in.

6-30-15LPA



ELECTRICAL

- Coverage 6-30 MHz
- Gain 5.5 to 8 dBd
- VSWR 2:1 and less, typ.
- F/B 15 dB, typ.
- Feed Imp 50 Ohms, unbal.
- Balun (3) Ferrite 4:1, 5 kW PEP
- Weight 150 lbs. (6-12-8)
70 lbs. (10-30-7)

MECHANICAL

- Elements 8 (6-12-8)
7 (10-30-7)
- Element Length 48 ft.
- Boom Length 46 ft. (6-12-8)
30 ft. (10-30-7)
- Boom Diameter 3 in.
- Turn Radius 33 ft.
- Windload 24 sq. ft.
- Mast 2 in./3 in. standard

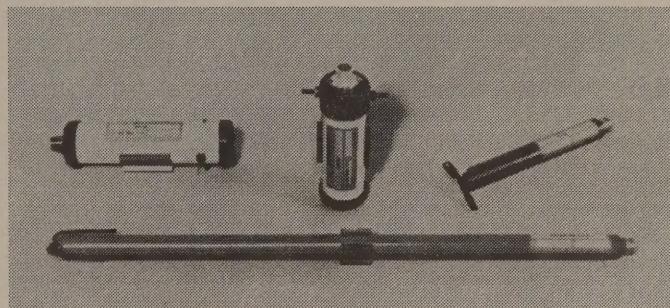
ACCESSORIES

Antenna Couplers/Power Divider

Broadband power divider/couplers are available for use in stacking VHF/UHF beams. These units replace the quarter-wave matching cable sections, barrel connectors, and "T" connectors that are ordinarily used. Matching input and output to 50 ohm impedances is automatic.

Use of these low loss devices results in significant savings in cost and complexity, and substantial reduction in cable and connector losses.

Construction is of copper tubing assuring minimal loss and providing excellent physical rigidity. The units are supplied with type "N" input and output connectors only. Power rating is conservatively 2 kW peak envelope power. They are "natural" for any array from two to thirty-two antennas. For experimenters, the 70 cm CS-2 Switcher is available as an accessory.



Part numbers indicate the band and the number of output ports.

2M-2N 2M-4N 220-4N 440-2N 440-4N

Baluns

When using balanced antennas with unbalanced coaxial lines, it is advisable to include a proper balun in order to ensure optimum broadband performance, low VSWR, and non-distorted patterns due to R.F. currents flowing in the coaxial sleeve.

Sleeve Baluns

KLM quarter-wave sleeve baluns feature the same rigid low-loss copper tubing used in the coupler/power dividers. The air dielectric design assures lowest R.F. losses.

SO-239 (UHF) connectors are standard for 2 meter and 220 MHz models, but type "N" connectors are available at no additional cost. Type "N" connectors are standard on the 450 MHz models.

Part Number	Impedance (Ohms)
2M-50	50 to 50
2M-50 (N)	50 to 50
220-50	50 to 50
220-50 (N)	50 to 50
440-50 (N)	50 to 50

Coaxial Baluns

KLM coaxial baluns are constructed of Teflon dielectric, silver-plated shield and center conductor coaxial cable. The new high-frequency 1:1 balun is rated conservatively at 5 kW. The VHF/UHF 4:1 baluns are rated at 2 kW.

Part Number	Impedance (Ohms)
3-60-1:1 Coax (5 kW High Freq.)	50 to 50
2M-4:1 Coax (2 kW)	50 to 200
220-4:1 Coax (2 kW)	50 to 200
440-4:1 Coax (2 kW)	50 to 200

Ferrite Baluns

KLM ferrite baluns are constructed of high efficiency ferrite cores and Teflon-insulated silver-plated wire. The 3-60-4:1 balun contains four of these cores and is conservatively rated at 5 kW. The new 5 kW rating is made possible by the use of two additional oversize cores which are 35% larger than those used in the older 4 kW PEP balun which contained only two cores. Part number indicates the frequency range in MHz and the impedance ratio.

Model Number	Impedance (Ohms) (Unbalanced to Balanced)
3-60 MHz 1:1, 5 kW PEP	50 to 50
3-60 MHz 4:1, 5 kW PEP	50 to 200
6-52 MHz 4:1, 10 kW PEP	50 to 200

Stacking Frame

2M x 2C	2M x 4
220 x 2	220 x 4
432 x 2C	432 x 4C

BULK RATE
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MONROE WA
98272

KLM

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